IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TYLER DIVISION

TRACBEAM, L.L.C.,	§	
	§	
Plaintiff,	§	
	§	
vs.	§	**CASE NO. 6:11-CV-96**
	§	
AT&T, INC., et al.,	§	
	§	
Defendants.	§	
	§	

MEMORANDUM OPINION AND ORDER

This Memorandum Opinion construes the disputed claim terms in U.S. Patent Nos. 7,525,484 ("the '484 Patent") and 7,764,231 ("the '231 Patent"). Additionally, Defendants' Motion for Summary Judgment of Indefiniteness (Docket No. 316) is **DENIED**.

BACKGROUND

The Plaintiff TracBeam, L.L.C. ("TracBeam") sued the following defendants for infringement of the '231 and '484 Patents: AT&T, Inc. and AT&T Mobility, L.L.C. ("AT&T"); MetroPCS Communications, Inc. and MetroPCS Wireless, Inc. ("MetroPCS"); Cellco Partnership, d/b/a Verizon Wireless ("Cellco"); TeleCommunication Systems, Inc. ("TCS"); Google, Inc. ("Google"); Skyhook Wireless, Inc. ("Skyhook"); and WaveMarket, Inc., d/b/a Location Labs ("Location Labs").[1] The Patents relate to methods and systems for determining the location of mobile devices using multiple location techniques. Even though it issued first, the '484 Patent is a continuation of the '231 Patent.

[1] This order refers to all defendants collectively as "Defendants," and it refers to AT&T, MetroPCS, Cellco, and TCS as the "Carrier Defendants."

APPLICABLE LAW

"It is a 'bedrock principle' of patent law that 'the claims of a patent define the invention to which the patentee is entitled the right to exclude.'" *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Innova/Pure Water Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). In claim construction, courts examine the patent's intrinsic evidence to define the patented invention's scope. *See id.*; *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 861 (Fed. Cir. 2004); *Bell Atl. Network Servs., Inc. v. Covad Commc'ns Group, Inc.*, 262 F.3d 1258, 1267 (Fed. Cir. 2001). This intrinsic evidence includes the claims themselves, the specification, and the prosecution history. *See Phillips*, 415 F.3d at 1314; *C.R. Bard, Inc.*, 388 F.3d at 861. Courts give claim terms their ordinary and accustomed meaning as understood by one of ordinary skill in the art at the time of the invention in the context of the entire patent. *Phillips*, 415 F.3d at 1312–13; *Alloc, Inc. v. Int'l Trade Comm'n*, 342 F.3d 1361, 1368 (Fed. Cir. 2003).

The claims themselves provide substantial guidance in determining the meaning of particular claim terms. *Phillips*, 415 F.3d at 1314. First, a term's context in the asserted claim can be very instructive. *Id.* Other asserted or unasserted claims can also aid in determining the claim's meaning because claim terms are typically used consistently throughout the patent. *Id.* Differences among the claim terms can also assist in understanding a term's meaning. *Id.* For example, when a dependent claim adds a limitation to an independent claim, it is presumed that the independent claim does not include the limitation. *Id.* at 1314–15.

"[C]laims 'must be read in view of the specification, of which they are a part.'" *Id.* (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc)). "[T]he specification 'is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.'" *Id.* (quoting *Vitronics*

Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996)); *see also Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002). This is true because a patentee may define his own terms, give a claim term a different meaning than the term would otherwise possess, or disclaim or disavow the claim scope. *Phillips*, 415 F.3d at 1316. In these situations, the inventor's lexicography governs. *Id.* Also, the specification may resolve ambiguous claim terms "where the ordinary and accustomed meaning of the words used in the claims lack sufficient clarity to permit the scope of the claim to be ascertained from the words alone." *Teleflex, Inc.*, 299 F.3d at 1325. But, "'[a]lthough the specification may aid the court in interpreting the meaning of disputed claim language, particular embodiments and examples appearing in the specification will not generally be read into the claims.'" *Comark Commc'ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed. Cir. 1998) (quoting *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1571 (Fed. Cir. 1988)); *see also Phillips*, 415 F.3d at 1323. The prosecution history is another tool to supply the proper context for claim construction because a patent applicant may also define a term in prosecuting the patent. *Home Diagnostics, Inc., v. Lifescan, Inc.*, 381 F.3d 1352, 1356 (Fed. Cir. 2004) ("As in the case of the specification, a patent applicant may define a term in prosecuting a patent.").

Although extrinsic evidence can be useful, it is "'less significant than the intrinsic record in determining the legally operative meaning of claim language.'" *Phillips*, 415 F.3d at 1317 (quoting *C.R. Bard, Inc.*, 388 F.3d at 862). Technical dictionaries and treatises may help a court understand the underlying technology and the manner in which one skilled in the art might use claim terms, but technical dictionaries and treatises may provide definitions that are too broad or may not be indicative of how the term is used in the patent. *Id.* at 1318. Similarly, expert testimony may aid a court in understanding the underlying technology and determining the

particular meaning of a term in the pertinent field, but an expert's conclusory, unsupported assertions as to a term's definition is entirely unhelpful to a court. *Id.* Generally, extrinsic evidence is "less reliable than the patent and its prosecution history in determining how to read claim terms." *Id.*

Defendants also contend that some claims at issue are invalid for indefiniteness. A claim is invalid under 35 U.S.C. § 112 ¶ 2 if it fails to particularly point out and distinctly claim the subject matter that the applicant regards as the invention. The party seeking to invalidate a claim under 35 U.S.C. § 112 ¶ 2 as indefinite must show by clear and convincing evidence that one skilled in the art would not understand the scope of the claim when read in light of the specification. *Intellectual Prop. Dev., Inc. v. UA-Columbia Cablevision of Westchester, Inc.*, 336 F.3d 1308, 1319 (Fed. Cir. 2003).

CLAIM TERMS

"mobile station"

"Mobile station" is "a mobile wireless device that is at least a transmitting device and may include a receiving device." The parties agreed to this construction at oral argument. Tr. *Markman* Hr'g 80–81, Nov. 8, 2012.

"communication station"

TracBeam argues no construction is necessary. Defendant Google proposes "networked cellular telephony base stations."

The parties dispute whether a communication station *is* a networked cellular telephony base station, or whether a networked cellular telephony base station is merely *one embodiment* of a communication station. Google contends that communication stations are called base stations in the specification, so the term "communication station" should be construed using a reference

to "base stations" in the Definition section of the '231 Patent.[2] *See* Docket No. 317 ("Response") at 3 (noting the phrase "base station" appears over 400 times in the specification, while the phrase "communication station" does not appear in the specification). The '231 Patent defines "infrastructure" as:

> …the network of telephony communication services, and more particularly, that portion of such a network that receives and possesses wireless communications with wireless mobile stations. In particular, *this infrastructure includes telephony wireless base stations* (BS) such as those for radio mobile communication systems based on CDMA, AMPS, NAMPS, TDMA, and GSM *wherein the base stations provide a network or cooperative communication channels* with an air interface with the MS….

'231 Patent, at 9:56–64 (emphasis added). Google contends its construction is proper because it is taken directly from the '231 Patent's Definition section. Response at 4. Google also contends that TracBeam's proposed construction in non-enabling because the specification does not disclose a communication system. *See id*. (quoting *Magsil Corp. v. Hitachi Global Storage Techs., Inc.*, 687 F.3d 1377, 1381 (Fed. Cir. 2012) ("The scope of the claims must be less than or equal to the scope of enablement to ensure that the public knowledge is enriched by the patent specification to a degree at least commensurate with the scope of the claims.")).

TracBeam argues that "communication station" and "networked cellular telephony base station" are not interchangeable; rather, a networked cellular telephony base station is one embodiment of a communication station. *See* Docket No. 315 ("Brief") at 4. ("'Communication' is not limited to 'cellular telephony' communication and 'station' is not limited to a 'base station.'"). In support, TracBeam notes that the '231 Patent discloses a mobile base station that can be "incorporated into a vehicle." '231 Patent, at 18:6–7. TracBeam contends it would be improper to limit the Claims to a particular embodiment absent an express disavowal of claim

[2] During prosecution, the phrase "base station" was changed to "communication station." Response at 3 n.11.

scope. Docket No. 326 ("Reply") at 2. It cites several cases asserting that a specification can be enabling even if it does not disclose every possible variant of an invention. *Id*.

TracBeam also argues Google's construction is too narrow. The infrastructure definition cited by Google references base stations, not communication stations. *See* '231 Patent, at 9:56–64. TracBeam argues that because a communication station is merely one embodiment of a base station, Google's construction improperly narrows the claim language. Reply at 2–3.

Google did not identify any language of disavowal in the specification, nor did it identify any other language indicating a communication station must be limited to a networked cellular telephony base station. On the contrary, there are multiple disclosed embodiments where a communication station is something other than a *telephony* base station. For example, there are references to "base stations of a commercial radio service provider,"[3] indoor location techniques using a "distributed antenna system,"[4] and "low power, low functionality base stations."[5] These are all non-telephony embodiments of a communication station. There are also embodiments of a *non-networked* base station. The specification discloses a mobile base station that "may not be in constant communication with the fixed location BS network (and indeed may be off-line for substantial periods of time)." '231 Patent, at 100:65–68. These mobile base stations are not part of a fixed network. For these reasons, a communication station is not limited to a networked cellular telephony base station.

Google's enablement arguments are unpersuasive. A specification is enabling when one skilled in the art could practice the invention without undue experimentation. *ALZA Corp. v. Andrx Pharm., LLC*, 603 F.3d 935, 940 (Fed. Cir. 2010). Google did not present any evidence

[3] '231 Patent, at 11:20–24.
[4] '231 Patent, at 11:48–49.
[5] '231 Patent, at 11:56–58.

that one skilled in the art could not practice the patented invention.[6] Further, even if Google was correct that the Patents disclosed only one embodiment, it would not necessarily follow that the claims must be limited to that embodiment. *See Phillips*, 415 F.3d at 1323. A specification may be enabling even if it does not describe how to make every possible variant of the claimed invention. *See AK Steel Corp. v. Sollac*, 344 F.3d 1234, 1244 (Fed. Cir. 2003). Thus, Google's enablement argument fails.

"Communication station" requires no construction.

"communication stations at terrestrial locations," "terrestrial communication stations," and "terrestrial stations"

TracBeam proposed "communication stations located on or supported (directly or indirectly) by the surface of the Earth." Google proposed "networked cellular telephony base stations," its same proposed construction as for "communication stations."

Under Google's proposed constructions, there is no difference between "communication stations" and "communication stations at terrestrial locations." This renders the modifying clause "at terrestrial locations" superfluous. The Federal Circuit has cautioned against constructions that turn claim language into "excess verbiage"—exactly what Google's construction would do here. *See Merck & Co., Inc. v. Teva Pharm. USA, Inc.*, 395 F.3d 1364, 1372 (Fed. Cir. 2005). The Patents separately refer to communication stations and communication stations at terrestrial locations; the terms are not used interchangeably. *See, e.g.*, '231 Patent, Claim 36, at 186:51–52; 187:2, 11–12. Thus, Google's construction is improper. *See Merck & Co.*, 395 F.3d at 1372 ("A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so."); *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1119 (Fed. Cir. 2004) ("While not an absolute rule, all claim terms are presumed to have a meaning in

[6] Google's only evidence of non-enablement was a single sentence of attorney argument. *See* Response at 4 ("If Plaintiff's non-construction is adopted, the claims are not enabled and are thus invalid.").

a claim."). Further, TracBeam's proposed construction follows the ordinary meaning of the word "terrestrial." *See* AMERICAN HERITAGE COLLEGE DICTIONARY 1400 (3d ed. 1997) (defining terrestrial as "of or relating to Earth or its inhabitants"); *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002) (acknowledging the heavy presumption that claim terms carry their ordinary and customary meaning).

Among the other parties, there is no dispute over the construction of these terms. The remaining Defendants concede that if even Google's construction is adopted, Google's construction would encompass TracBeam's construction. *See* Response at 3 n.10 ("Defendants agree with Plaintiff that 'communication stations at terrestrial locations,' 'terrestrial communication stations,' and 'terrestrial stations' must be 'located on or supported (directly or indirectly) by the surface of the earth.'"). Thus, it is agreed by all parties except Google that "communication stations at terrestrial locations," "terrestrial communication stations," and "terrestrial stations" must be located on or supported (directly or indirectly) by the surface of the earth. These terms require no further construction.

"computational machinery," "computational machinery performing first and second mobile station location estimation determiners," "computational machine location providing sources," "mobile station location estimation determiners," "mobile station location determining sources," "mobile station location estimation sources," and "mobile station location techniques"

While this is a diverse collection of claims terms, the parties agree that resolution of a single dispute governs them all. *See* Reply at 5 n.12. For ease of analysis, the Court will use "computational machinery" and "mobile station location techniques" to explain its constructions. For "computational machinery," TracBeam proposes "one or more machines (such as a computer or hardware device) that performs computations." Skyhook proposes "one or more computers not located in a mobile station." For "mobile station location techniques," TracBeam proposes "technique for determining mobile station locations." The Carrier Defendants propose "a

technique performed by centralized computer equipment for determining mobile station locations."

The parties have two disputes regarding these terms: (1) whether "computational machinery" and "mobile station location techniques" should be limited to "computers;" and (2) whether computational machinery and mobile station location techniques must be "centralized," or whether they may be "located in a mobile station." At oral argument, Defendants consented to TracBeam's hardware device construction that the terms are not limited to computers.[7] Tr. *Markman* Hr'g 53, Nov. 8, 2012. Thus, the sole remaining issue is whether computational machinery and mobile station location techniques must be "centralized" and must not be located in a mobile station.

TracBeam argues that computational machinery does not have to be centralized and can exist in a mobile station. Brief at 7. TracBeam argues that the '231 Patent describes multiple location centers that are "geographically dispersed" and notes that system components may be "distributed" on a network. Brief at 8; '231 Patent, at 20:45–46. TracBeam contends that because system components are distributed throughout the network, their location need not be centralized. Brief at 8. Defendants counter that computational machinery must be located at a "location center." Reply at 6; '231 Patent, at 24:46. Defendants note that Figure 4 of the '231 Patent discloses a centralized network node that is separate and distinct from the mobile stations. Reply at 6. Further, Defendants assert that the specification does not disclose an embodiment where computational machinery located on one mobile station performs steps for another mobile station. *Id*. at 7. Thus, Defendants argue the computational machinery cannot be located at a mobile station. *Id*.

[7] Defendants made similar statements in their briefing. *See* Reply at 8 n.19 ("[Defendants] do not dispute that switches, routers, and the like are computer equipment.").

Defendants' arguments rest on one particular passage in the specification:

> Added to this wireless network, the *present invention* provides the following additional components: (10.1) a *location center* 142 which is *required* for *determining a location of a target MS* 140 using signal characteristic values for this target MS.

'231 Patent, at 24:43–48 (emphasis added). Defendants argue this "location center" limitation must be applied to the entire patent because the sentence describes "the present invention." Reply at 6; *See Verizon Servs. Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1308 (Fed. Cir. 2007) ("When a patent thus describes the features of the 'present invention' as a whole, this description limits the scope of the invention."). However, use of the phrase "the present invention" does not automatically limit the entire patent. *Absolute Software, Inc. v. Stealth Signal, Inc.*, 659 F.3d 1211, 1136 (Fed. Cir. 2011). The phrase is not limiting when other intrinsic evidence does not support applying the limitation to the entire patent. *Id.*; *see DSW, Inc. v. Shoe Pavilion, Inc.*, 537 F.3d 1342, 1348 (Fed. Cir. 2008) (cautioning against importing limitations from the specification).

Here, there are multiple references in the specification disclosing de-centralized computational machinery and location centers. For example, the specification teaches that a mobile location unit may be located onboard a mobile base station. '231 Patent, at 99:55–60. It also teaches that a mobile location unit can use a GPS receiver to determine the location of a target mobile station. '231 Patent, at 99:63–67. It further teaches that there may be multiple location centers that are "geographically dispersed." '231 Patent, at 20:44–46. Lastly, the Background of the Invention implies that GPS computations may be performed "at or near the object to be located." '231 Patent, at 1:64–66. These references indicate that computational machinery need not be "centralized" or "not located in a mobile station." It would be improper to

import this limitation to the entire patent when there are multiple embodiments teaching de-centralized computational machinery and mobile station location techniques.[8]

"Computational machinery" is "one or more machines (such as a computer or hardware device) that performs computations." "Computational machinery performing first and second mobile station location estimation determiners" requires no construction. "Computational machine location providing sources" is "computational machinery for providing location information." "Mobile station location estimation determiners" is "machine executed process for providing mobile station location estimates." "Mobile station location determining sources" is "source (such as a computer system, device, or component) for determining mobile station locations." "Mobile station location estimating sources" is "source (such as a computer system, device, or component) for estimating mobile station locations." "Mobile station location techniques" is "technique for determining mobile station locations."

"location information," "location related information," and "location related response information"

The parties agree a single dispute governs these three terms—whether location information must *identify* a location or merely *be related to* a location. Tr. *Markman* Hr'g 14, 18, Nov. 8, 2012. For simplicity, the Court uses the first term, "location information," to explain its construction.

TracBeam argues no construction is necessary. In the alternative, TracBeam proposes "information related to a location." The Carrier Defendants and Google propose "information identifying a location." Skyhook proposes "information indicating a determined location of a mobile station."

[8] The parties' remaining claim disputes are non-substantive—the only issue addressed at oral argument was whether computational machinery must be centralized. *See* Tr. *Markman* Hr'g 53, Nov. 8, 2012.

TracBeam argues that Defendants' proposed constructions unnecessarily limit the claim term. Brief at 13. Its first argument is grammatical. TracBeam argues that when two nouns are used consecutively, the second noun does not identify an instance of the first. *Id*. at 14. For example, TracBeam notes that a "mountain bike" is not a "bike that identifies a mountain." *Id*. Similarly, TracBeam argues that "location information" cannot logically be interpreted as "information that identifies a location." *Id*. Second, TracBeam argues that location information is not limited to a "determined location." *Id*. at 15. Instead, location information can include data, measurements, and estimates. *Id*. TracBeam contends that when location information relates to a determined location in the claims, it is emphasized by further limiting language. *Id*. (citing '231 Patent Claim 10, at 174:61–67).

Defendants argue that "location information" must include an estimate of the location of a mobile station. Response at 10. In Claim 25 of the '231 Patent, location information is obtained using corresponding location techniques that "determine a location for the mobile station." '231 Patent, Claim 25, at 180:30–32. A different claim in the '231 Patent (Claim 1) states that location related information is obtained from location estimation determiners that "provide different geographical indications of an unknown location." '231 Patent, Claim 1, at 171: 6–11. Defendants contend that, while the particular claim language varies, location information "is obtained from wireless location technologies…that provide an estimate of a mobile station's location." Response at 11. Additionally, Defendants argue that TracBeam's grammatical arguments are unpersuasive. *Id*. at 13. Defendants contend that unlike "mountain bike," the phrase "location information" does not have a commonly understood meaning. *Id*. Since location information does not have a commonly understood meaning, it cannot be defined in isolation. *Id*.

The specification discloses multiple instances where location information is only *used* to identify a location instead of *actually identifying* a location. For example, location information may be "measurement results related to signals" that are "used to locate" the target mobile station. '231 Patent, at 27:46–53. Location information may also be "used in deriving" a location estimate. '231 Patent, at 110:35–41. Because the specification teaches using location information to identify a location, "location information" itself cannot be construed to require an identified location.

None of the four specification passages cited by Defendants compel a different construction.[9] Defendants assert that the specification refers to location information as a "location hypotheses." Reply at 11. Defendants contend that a location hypothesis includes at least a location estimate. *Id*. Since a location hypothesis includes a location estimate, Defendants contend location information must also include a location estimate. *Id*.

The flaw in Defendants' argument is that a location estimate is not equivalent to a location hypothesis. A patentee may impliedly redefine a claim term by using a second term as an alternative. *Thorner v. Sony Computer Entm't Am. LLC*, 669 F.3d 1362, 1368 (Fed. Cir. 2012). However, the "implied redefinition must be so clear that it equates to an explicit one." *Id*. (internal citations omitted).

Both the express and implied redefinition arguments fail here. Defendants did not cite any language in the specification or claims expressly stating that hypothesis is synonymous with information. None of the passages cited by Defendant even contain the phrase "location information." *See id*. (using two terms in similar fashion is not sufficient to redefine a claim term). Further, there is no clear implied redefinition. The words hypothesis and information have very different ordinary meanings. "Hypothesis" implies some sort of prediction; "information"

[9] Defendants cite '231 Patent, at 13:7–33; *id*. at 37:31–36; *id*. at 13:37–41; *id*. at 68:2–8. Reply at 11–12.

does not. Thus, the patents do not redefine location hypothesis to mean location information. Accordingly, it would be improper to limit "location information" based on specification references to "location hypotheses." *See Computer Docket Station Corp. v. Dell, Inc.*, 519 F.3d 1366, 1374 (Fed. Cir. 2008) ("This court will not countenance the importation of claim limitations from a few specification statements or figures in the claims.").

Defendants' construction is improper for a second reason—it seeks to import the final result of the claims into an intermediate step. Defendants argue that location information must identify a location because identifying a location is the fundamental purpose of the patent. Response at 10–11. However, the concept of identifying a location is found in other clauses in the claims.[10] This implies that "location information" is broader than merely identifying a location. Instead, obtaining location information is just part of the process of obtaining an actual location identification or estimate. Obtaining location information occurs before analyzing the information obtained from multiple sources. *See* '231 Patent, Claim 1, at 171:29–35. The output of that analysis is the actual identification of a location. Location information itself is something that can be used to identify a location. '231 Patent, at 27:46–53; *id*. at 110:35–41. The actual identification of a location occurs in later steps. Thus, location information does not have to identify a location.

"Location information," "location related information," and "location related response information" do not require construction.

[10] For example: "the first location related information includes a geographical indication for a location of the mobile station," '231 Patent, Claim 1, at 171:17–19; "location techniques uses the first collection to determine a location for the mobile station," '231 Patent, Claim 25, at 180:31–32; "first location technique estimates a location of the mobile station," '231 Patent, Claim 162, at 205:43–44; "data indicative of a likelihood of the mobile station being at a location represented by said resulting location information," '231 Patent, Claim 162, at 206:5–7; "providing one or more location requests for location information, related to a location of one of said mobile stations," '484 Patent, Claim 27, at 175:9–11; "first location related information representing one or more of: a first range of locations for the first mobile station," '484 Patent, Claim 44, at 177:59–61.

"an unknown location of said mobile station M"

The parties agreed not to seek construction of the phrase "geographical indications" and request that the Court only construe "of an unknown location of said mobile station M." TracBeam proposes "a location of the mobile station for which a resulting location estimate is to be determined." Defendants propose "a location that has not been determined."

The dispute is whether an "unknown location" is a location that has "not been determined" or a location for which "a resulting location estimate is to be determined." TracBeam argues that Defendants' proposed construction improperly requires an unknown location to be categorically unknown. Brief at 16. TracBeam argues this is improperly broad; TracBeam contends the location is only unknown to the extent that it is not yet known to the source or structure that requested the location. *Id*. The location may be known to the location determiners, which TracBeam argues may have themselves determined the location of the mobile station. *Id*. at 17.

Defendants argue the location is "unknown" up to and including the time the location estimator determiners are supplied with input data. Response at 14. Defendants contend that TracBeam's construction is illogical because a known location cannot exist before the location estimation determiners provide their output. *Id*. Second, Defendants dispute TracBeam's interpretation of their proposed construction. Defendants contend their construction does not require the location to be categorically unknown. *Id*. at 14 n.28. Rather, Defendants argue their construction clarifies that "the location must be unknown to the determiner at least at the time when that determiner is supplied with input information." *Id*.

TracBeam proposes the more reasonable construction. The Claim recites that "location estimation determiners provide different geographical indications of an unknown location" of the

mobile station M when the determiners are supplied with input data. '231 Patent, Claim 1, at 171:9–13. Later, the claim recites a "determination" step that outputs the location estimate of mobile station M. '231 Patent, Claim 1, at 171:29–31. The phrase "mobile station M" ties these two phrases together. When read together, these two passages indicate that providing an "unknown location" is merely one step in determining a "location estimate." An unknown location is one for which a resulting location estimate will be determined; it is not a location that has not been determined. Thus, TracBeam's proposal that an unknown location is one "for which a resulting location estimate is to be determined" is correct.

"An unknown location of mobile station M" is "a location of the mobile station for which a resulting location estimate is to be determined."

"wireless signal" and "wirelessly"

The parties agreed at oral argument that these terms did not require construction. Tr. *Markman* Hr'g 88–89, Nov. 8, 2012.

"output criteria"

TracBeam proposes "data specifying one or more required attributes of the output location data, such as information relating to the accuracy or granularity of a location estimate or the frequency with which location estimates are to be output." AT&T proposes "criteria used to generate a representation of an identified location." The remaining Carrier Defendants propose "criteria used in determining the error records to output."

TracBeam first argues that "output criteria" is data. Brief at 19. Claim 10 of the '231 Patent states that output criteria "includes data for location accuracy, or data for location determining repetition." '231 Patent, Claim 10, at 175:25–26. TracBeam contends that if output criteria includes types of data, then it must be comprised of data. Brief at 19. Second, TracBeam

proposes the construction include "specifying one or more required attributes of the output location data." TracBeam contends that output criteria is data "that tells the system performing the method what is required of the 'output location data' – i.e., what attributes it must have." *Id.* at 20. Lastly, TracBeam requests that two examples of output criteria be included in the Court's construction. Both examples (accuracy and granularity) are referenced in some of the asserted claims. *See, e.g.*, '231 Patent, Claim 10, at 175:25–26. TracBeam believes these two examples would be helpful to a juror evaluating unfamiliar terms. Brief at 21.

TracBeam takes issue with both of Defendants' proposed constructions. Brief at 22. AT&T proposes "criteria used to generate a representation of an identified location," to which TracBeam raises three objections. First, AT&T does not construe the word "criteria." *See id.* (arguing the word criteria would not be familiar to a jury). Second, TracBeam contends the phrase "representation of an identified location" is improper. *Id.* TracBeam argues that while output criteria may relate to a representation, it is not required. *Id.* TracBeam also argues that AT&T's construction may be interpreted more broadly than the claims require because it does not specify that the "output" in output criteria refers to the "output location data." *Id.* Lastly, TracBeam objects to the word "generate." *Id.* TracBeam asserts that the act of generating a representation is not in the claim because the output location data need only include the representation itself. *Id.* at 23.

TracBeam also rejects Cellco's construction. *See id.* Cellco proposed "criteria used in determining the error records to output," which is taken almost verbatim from a passage in the specification. *See* '231 Patent, at 100:16–17 ("Output_criteria: The criteria used in determining the error records to output in 'error_rec_bag.'"). TracBeam argues that Cellco's construction is refuted by the language of the claims, since "error records" does not appear in any of the asserted

claims. Brief at 23. Second, TracBeam contends that Cellco improperly imported an embodiment from the specification. *Id*. TracBeam argues the definition relates to a specific embodiment, not the entire patent. *Id*. at 24.

AT&T argues its construction is supported by the asserted claims. Response at 17. AT&T cites Claim 27 of the '484 Patent, which requires starting with location information, then applying the output criteria to generate the output location data. *Id*. at 18. Output location data includes "a representation identifying a first geographical location" of the first location. '484 Patent, Claim 27, at 175:22–24. Thus, AT&T argues that output criteria must be used to generate that representation. Response at 18.

Cellco's proposed construction and arguments are different. Cellco argues that the patentee acted as its own lexicographer, expressly defining "output criteria." *Id*. at 19; *see* '231 Patent, at 80:15–21. Cellco represents that all embodiments in the Patents use their proposed definition. Response at 20. Cellco further contends that its construction is supported by Claim 10 of the '231 Patent, which states that output criteria includes "data for location accuracy, or data for location determining repetition." *Id*. at 19. Cellco argues that because error rates are strongly associated with accuracy and repetition, output criteria must be used to determine error records. *Id*. at 19–20.

Cellco's construction is incorrect because it improperly limits the claim to a single embodiment. Cellco's definition comes from a distinct embodiment described as the "Location Signature Comparison Program."[11] *See* '231 Patent, at 79:20–80:38. However, it can be inferred from the surrounding embodiments that definitions within a single embodiment were not

[11] Even if Cellco was correct that the Patents disclosed only a single embodiment, it would be improper to limit the claims to that embodiment. *See Phillips*, 415 F.3d at 1323 ("Although the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments. In particular, we have expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment.") (internal citations omitted).

intended to be global definitions. The very page cited by Cellco defines "search_criteria" differently for two different embodiments ('231 Patent, at 79:1–2; 80:6–7), and "loc_sig_bag" is defined differently for separate embodiments on the previous page ('231 Patent, at 77:56–58; 78:19–20). The disclosed embodiments do not use terminology consistently from embodiment to embodiment, nullifying Cellco's argument that definitions are global. Thus, the definition of "output_criteria" in the "Location Signature Comparison Program" embodiment is not globally controlling.

Further, Cellco's construction of output criteria does not match the context of the claims. None of the claims define output criteria as something used to determine error records. None of the asserted claims even use the phrase "error records." Instead, the claims provide specific examples of output criteria that are independent of error records. Claim 10 of the '231 Patent states that output criteria includes "data for location accuracy" and "data for location determining repetition." '231 Patent, at 175:24–26. Claim 36 of the '484 Patent states that output criteria includes "information for determining a first location granularity." '484 Patent, at 176: 34–37. Claim 61 of the '231 Patent states that output criteria includes "mobile station location output frequency information." '231 Patent, at 191:19–21. These claims further indicate that Cellco's construction is improper.

AT&T's proposed construction of "criteria used to generate a representation of an identified location" is too narrow. The claims recite that output criteria may include things beyond AT&T's construction, like "data for location accuracy," "data for location determining repetition," and "mobile station location output frequency information." '231 Patent, at 175:24–26; 191:19–21; '484 Patent, at 176:34–37. AT&T's use of the phrase "identified location" is also too narrow. The claims recite a "geographical indication," not an "identified location." *See* '231

Patent, Claim 10, at 175:4. Geographical indication and identified location are not synonymous, but AT&T never addresses its substitution of terms. For these reasons, AT&T's construction is improper.

TracBeam's proposed construction is correct for many of the reasons set forth above. There are several specific examples of output criteria in the claims, such as "data for location accuracy," "data for location determining repetition," and "mobile station location output frequency information." '231 Patent, at 175:24–26; 191:19–21; '484 Patent, at 176:34–37. All of these examples are "attributes of the output location data." Further, Defendants cited no evidence limiting output criteria to an identified location. TracBeam's proposal, which does not tie output criteria to an identified location, is more appropriate. However, TracBeam's proposed construction is unnecessarily wordy. The examples cited in TracBeam's definition are unnecessary and may confuse a jury. Accordingly, those words are not part of the Court's construction.

"Output criteria" is "data specifying one or more required attributes of the output location data."[12]

"a corresponding destination for a responsive output"

Both sides agree that no construction is necessary. Docket No. 331, Ex. A, at 14.

"determining resulting location information" terms

These five terms[13] present the same legal issue and can be evaluated together. All of the phrases contain the words "at least one of." TracBeam argues that no construction is necessary of

[12] TracBeam consented to this construction at oral argument. Tr. *Markman* Hr'g 58, Nov. 8, 2012.

[13] The five terms are: "a determination of said resulting location estimate is dependent upon at least one of (a) and (b) following: (a) a first value obtained from said first location related information, and (b) a second value obtained from said second location related information;" (2) "determining resulting location information for each of the first and second mobile stations using at least one of: (c1) a first value obtained from said first location related information, and (c2) a second value obtained from said second location related information;" (3) "determining resulting location information of the mobile station using at least one of: a first value obtained from said first

any of the terms. Defendants' proposed constructions replace "at least one of" with "a simultaneous evaluation and/or combination of." The same arguments apply to all five terms.

The sole dispute is whether the Claims should be interpreted as requiring "a simultaneous evaluation and/or combination of." TracBeam contends this is a misstatement of the claim. First, TracBeam argues that Defendants' construction improperly requires two values. Brief at 25. The claim language recites "at least one," which could mean only one, while Defendants' language implies two values. *Id*. Second, TracBeam represents that the phrase "simultaneous evaluation and/or combination" does not appear in either patent, and there are no disclaimers of "at least one of" in the specification. *Id*. at 26. Third, TracBeam argues that the passages from the specification cited by Defendants are not controlling. *Id*. TracBeam asserts that to the extent the specification describes simultaneous activities, it is describing activation of the location estimators. *Id*. at 27. TracBeam contends these location estimators can be activated either serially or in parallel. *Id*.

Defendants present three arguments to support their construction. First, Defendants make a big picture argument. Defendants argue the entire purpose of the Patents is to use two location techniques to determine the location of a mobile station. Response at 22. In order to actually use both techniques to determine a location, they must be evaluated simultaneously. *Id*. Defendants contend it would be impossible to determine which location hypothesis to select without evaluating or comparing the two hypotheses together. *Id*. Second, Defendants argue their construction is compelled by the specification. *Id*. Defendants cite two passages referencing

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location related response information, and a second value obtained from said second location related response information;" (4) "determining resulting location information, for each of one or more locations of said mobile station, using at least one of: a first value obtained from the first instance, and a second value obtained from the second instance; " and (5) "outputting, to a source for accessing location data for said mobile station, resulting location information that is dependent upon: at least one of said first and second location information."

using location estimates "synergistically" to obtain an accurate and reliable result. *Id*. at 23. Defendants contend use of the word "synergy" implies a simultaneous combination or evaluation of multiple values. *Id*. Lastly, Defendants contend that TracBeam's construction yields a claim scope far beyond what was actually invented. *Id*. at 25. If both values are not evaluated simultaneously, the Claims may be satisfied by estimating the location of a mobile station twice at two different times and locations. *Id*. Defendants argued at the claim construction hearing that if TracBeam's construction was adopted, two measurements 365 days apart may satisfy the claims. Tr. *Markman* Hr'g 37, Nov. 8, 2012.[14] Defendants contend this is "blatantly inconsistent" with the purpose of the Patents. Response at 25.

While Defendants are correct that the Patents are directed towards using two location techniques to determine the location of a mobile station, their construction overreaches. Defendants make several arguments that determination/evaluation must be "simultaneous," but those same arguments would also support serial evaluation. For example, Defendants cite two passages from the specification referring to "synergistically" using two values to estimate a location. '231 Patent, at 12:7–16; *id*. at 68:2–8. Defendants then ask the Court to view synergistically as synonymous with simultaneously and require the evaluations to be performed simultaneously. Reply at 23. However, this argument ignores the difference between synergy and simultaneous. Synergy is defined as "the interaction of two or more agents or forces so that their combined effect is greater than the sum of their individual effects." AMERICAN HERITAGE COLLEGE DICTIONARY 1376 (3d ed. 1997). Synergy does not have a contemporaneous time requirement; synergy could still be obtained by evaluating two values serially, then providing a location estimate.

[14] This argument is something of a red herring. TracBeam stated at the *Markman* hearing that it would not "be accusing any system that provides estimates that are a year apart." Tr. *Markman* Hr'g 38, Nov. 8, 2012.

Neither of Defendants' other cited passages compel their construction. One of the passages teaches that "location hypotheses" be "utilized simultaneously." '231 Patent, at 87:44–58. However, the sentence is permissive, using the word "may," and only describes a single embodiment of the invention. *See Phillips*, 415 F.3d at 1323 ("Although the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments."); *Embs v. Jordan Outdoor Enters., Ltd.*, 617 F. Supp. 2d 680, 693–94 (S.D. Ohio 2008) (using the word "may" in the specification indicates the patentee contemplated other embodiments). The other passage states:

> A fundamental aspect of the present invention is to use a plurality MS location techniques for generating location estimates and to analyze the generated estimates (likely after being adjusted) to detect patterns of convergence or clustering among the estimates.

'231 Patent, at 66:9–14. This passage could support Defendants' position that the evaluation must be "simultaneous," but it also could support TracBeam's position that the evaluation may occur serially. The Patents teach detecting patterns among the estimates. This does not preclude evaluating the estimates serially, then detecting patterns among the estimates.[15] The Abstract of the '231 Patent even states that techniques may be performed serially or in parallel. '231 Patent Abstract.

The parties' only dispute regarding these five terms is whether "at least one of" should be replaced with "simultaneous evaluation and/or combination of." For the reasons stated above, the evaluation does not have to be simultaneous. The Court adopts TracBeam's proposal that no construction of the "determining resulting location information" phrases is necessary.

[15] Dr. Madisetti, Defendants' expert, conceded this point in his deposition. Reply, Ex. 1, at 3.

"wherein said one or more location determining sources perform the following techniques (i), and (ii)"

TracBeam proposes "wherein each of the location determining sources performs one or both of the following techniques (i) and (ii) and there is at least one location determining source or combination of such sources that collectively perform both techniques." AT&T proposes "wherein at least one of said location determining sources is capable of performing both of the following techniques (i), and (ii)." The remaining Carrier Defendants propose "wherein said one or more location determining sources each perform both of the following techniques (i), and (ii)."

All parties agree that when there is only one location determining source, that source must perform both techniques—the disagreement is over what happens when there are multiple determining sources. *See* Brief at 27; Response at 25–26. TracBeam argues that if there are multiple sources, the sources must collectively perform both techniques. Brief at 27. AT&T argues that if there are multiple sources, at least one of the sources must be capable of performing both techniques. Brief at 26. AT&T contends that unless at least one source is capable of performing both techniques, it would be impossible for both techniques to be performed when there is only one location determining source. *Id*. Cellco argues that if there are multiple sources, each source must perform both techniques. *Id*. at 27.

TracBeam presents the most logical reading of the claim language. The claim language recites "one or more location determining sources perform the following techniques (i), and (ii)." '231 Patent, Claim 10, at 174:27–28. Cellco's proposed construction adds the words "each" and "both of" to the claim language without any support from the record. *See* Response at 27. In fact, one of the passages cited by Cellco teaches that location estimators perform "one or more" location techniques. *See* '231 Patent, at 11:13–16. This passage implies that a single estimator

may perform a single location technique, refuting Cellco's construction that each location determining source must perform both techniques. AT&T's construction also adds a limitation without support from the record. AT&T contends that at least one of the location determining sources must be capable of performing both techniques. Brief at 26. Much like Cellco, AT&T's construction literally adds words to the Claim.

TracBeam's construction is supported by the structure of the Claim. The phrase has three parts: (1) the subject—"one or more location determining sources;" (2) the verb—"perform;" and (3) the object—"the following techniques (i), and (ii)." From a basic grammatical standpoint, the subject does the action specified by the verb to the object. If there is only one source, that source must perform techniques (i) and (ii); it must perform both techniques. If there are multiple sources, the sources must perform techniques (i) and (ii). There is no further limitation in the claims that one source must perform both techniques or be capable of performing both techniques. Rather, the Claim merely requires that "sources…perform…techniques." This can be accomplished by each source performing one technique. Collectively, the multiple "sources…perform…techniques." Thus, TracBeam's proposed construction is correct.

"Wherein said one or more location determining sources perform the following techniques (i), and (ii)" is "wherein each of the location determining sources performs one or both of the following techniques (i) and (ii), and there is at least one location determining source or combination of such sources that collectively perform both techniques."

"corresponding input data obtained using wireless signal measurements obtained by transmission between said mobile station M and the communication stations"

TracBeam argues the entire phrase does not require construction. Alternatively, TracBeam proposes that the term corresponding "refers to the correspondence between the input

data (and specifically, the type of location information it contains) and the process or technique of the location estimation determiner to which it is input." Defendants propose "corresponding wireless signal characteristics obtained using wireless signal measurements transmitted between said mobile station M and the communication stations."

There are two disputes regarding this term. First, the parties dispute the phrase "input data." Defendants' construction replaces input data with "wireless signal characteristics," which they contend is proper. *See* Response at 30 ("Input data is wireless signal characteristics."). They arrived at the phrase "signal characteristics" from the specification. *See id*. Defendants cite a passage that teaches locating a mobile station "using signal characteristic values." '231 Patent, at 24:43–48. Defendants obtained the word "wireless" from the Claim, which states that input data is obtained using "wireless signal measurements." '231 Patent, Claim 1, at 171:14. TracBeam asserts that input data is not limited to wireless signal characteristics. Brief at 30. It cites a passage in the specification teaching that the "identification of each base station" and "sector identification information" may be exchanged during communication with a mobile station. '231 Patent, at 25:30–34.

"Input data" does not need to be construed. The claim recites "input data obtained using wireless signal measurements." '231 Patent, Claim 1, at 171:13–14. From the claim language alone, it is easily understood that input data is something obtained from wireless signal measurements. However, input data does not appear to be limited to wireless signal characteristics. The specification teaches that input data may include the "identification" of a base station or "sector identification" information. '231 Patent, at 25:30–34. There is also a reference to transmitting "GPS signals" to a data center. '231 Patent, at 2:21–23. Thus, it would

be too constrictive to limit input data to "wireless signal characteristics" when there are other examples of input data in the specification.

The parties' second dispute is over the word "transmissions." Defendants argue the phrase "obtained by transmissions" must be construed because it is ambiguous. Response at 28. They contend "obtained by transmissions" could mean either: (A) transmitting the actual wireless signal measurements; or (B) measuring the characteristics of the transmitted wireless signals. *Id*. at 28–29. Defendants believe Claim 1 mandates definition (A). *Id*. at 29. Claim 1 requires the use of a satellite-based location technology,[16] and Defendants argue that (B) excludes satellite signals. *Id*. Defendants contend it would be illogical to construe the claim as (B) because that would exclude satellite signal measurements. *Id*. TracBeam counters that "obtained by transmissions" is unambiguous, and the Court does not need to resolve Defendants' dispute between options (A) and (B). Reply at 10.

Defendants' argument relies on the principle that satellite-based technologies do not involve (B)—measuring the characteristics of the wireless signals transmitted between the mobile station and the satellite. However, Defendants provide no support for that position, and the claim language implies the opposite. Claim 1 states that a geographical indication is obtained by "a delay time of a signal" from a satellite. '231 Patent, Claim 1, at 171:23–26. This language indicates the valuable information is the length of delay to receive the signal, not the actual contents of the signal. Additionally, Defendants' technology tutorial contradicts their briefing argument. It states, "A GPS receiver determines the time delay of the signals received from the satellites. Using these time delays, the distance between the GPS receiver and the four or more satellites can be determined." Defendants' Technology Tutorial, at 11. This appears to be a measurement of the transmitted signal, not a transmission of the actual signal.

[16] *See* '231 Patent, Claim 1, at 171:23–28.

For the foregoing reasons, the phrase "obtained by transmissions" encompasses both Defendants' options (A) and (B). It includes transmitting the actual wireless signal measurements and measuring the characteristics of the transmitted wireless signals. In light of this interpretation, the Court does not need to construe the entire phrase.

"Corresponding input data obtained using wireless signal measurements obtained by transmissions between said mobile station M and the communication stations" requires no construction.

"geographical extent"

The parties agreed to "geographical area or range." Docket No. 331, Ex. A, at 19.

INDEFINITENESS TERMS

"when available"

Defendants argue Claim 1 of the '231 Patent is insolubly ambiguous because of the phrase "when available." Docket No. 316 ("Indefiniteness Brief") at 3. Defendants contend there is no way to determine whether "when available" refers to "location related information" or "geographical indication." *Id*. The disputed language states:

> Receiving first and second location related information, respectively, from computational machinery performing first and second mobile station location estimation determiners, wherein said location estimation determiners provide different geographical indications of an unknown location of said mobile station M when said location estimation determiners are supplied with corresponding input data obtained using wireless signal measurements obtained by transmissions between said mobile station M and the communication stations;
>
> Wherein, *when available*, the first *location related information* includes at least a first *geographical indication* for a location of the mobile station M;
>
> Wherein, *when available*, the second *location relation information* includes at least a second *geographical indication* for the location of the mobile station M;

'231 Patent, Claim 1, at 171:6–22 (emphasis added). Defendants argue either location related information or a geographical indication could be unavailable. Indefiniteness Brief at 3–4. In support, they cite two dependent claims. *See* '231 Patent, Claim 212, at 215:66–67 ("The first

location related information is unavailable or unsatisfactory for the location L."); '231 Patent, Claim 212, at 216:36–37 ("The first geographical indication is not obtained."). Thus, Defendants assert that "when available" is ambiguous because neither "location related information" nor "geographical indication" are always available. Indefiniteness Brief at 4.

TracBeam argues that "when available" modifies "geographical indication" because "location related information" is always available, while a "geographical indication" is not. Docket No. 322 ("Indefiniteness Response") at 4. TracBeam cites a portion of Claim 1 which reads "receiving first and second location related information." *See* '231 Patent, Claim 1, at 171:6. TracBeam argues this passage indicates that location related information must always be available because it is received. Indefiniteness Response at 5. As for geographical indication, TracBeam cites a different portion of Claim 1: "wherein said location estimation determiners provide different geographical indications of an unknown location of said mobile station M when said location estimation determiners are supplied with corresponding input data." *See* '231 Patent, Claim 1, at 171:9–13. TracBeam argues this passage is conditional, so a geographical indication is only available when location estimation determiners are supplied with input data. Indefiniteness Response at 6. If the determiners are not supplier with input data, the geographic indications are not required to be available. *Id*.

TracBeam presents a more logical reading of the Claim. Based on the language of Claim 1, location related information must always be available. The Claim unconditionally recites "receiving" location related information, and there is no language indicating location related information may ever be unavailable. *See* '231 Patent, Claim 1, at 171:6. Claim 212, cited by Defendants, is consistent with this reading. Claim 212 does not require that location related information be categorically unavailable. Rather, Claim 212 requires that location related

information be unavailable "for the location L." '231 Patent, Claim 212, at 215:66–67. Claim 1 does not contain any limitation regarding "locating *one* of the mobile stations,"[17] and it does not address a particular "location L."[18] Thus, location related information is always available. On the contrary, geographical indications are not required to be available.[19] For example, Claim 1 describes geographical indications in conditional language—geographical indications are only available when location estimation determiners are supplied with input data. *See* '231 Patent, Claim 1, at 171:9–13.

For the foregoing reasons, the phrase "when available" is not insolubly ambiguous because it modifies "geographical indications." Defendants' motion for summary judgment of indefiniteness of Claim 1 is **DENIED**.

"Mn"

Defendants next argue Claim 185 of the '231 Patent is indefinite because there is no way to determine which mobile stations make up the set of stations designated Mp. Indefiniteness Brief at 5. The relevant portion of the claim states:

> Wherein for at least one mobile station (Mp) of the mobile stations Mk and the corresponding location for Mp according to (B) above, the location indicative data for *Mn* is not obtained using geographic data indicative of a spatial range between the mobile station Mp and one or more transmitting stations above and not supported on Earth's surface;

'231 Patent, Claim 185, at 211:19–25 (emphasis added). Defendants' argument presents an unusual situation. Both sides agree the term Mn (emphasized above) was the result of a Patent Office printing mistake. Indefiniteness Response at 10 n.1; Docket No. 335 ("Indefiniteness Reply") at 3–4. Based on the prosecution history, the term Mn should have been printed as

[17] '231 Patent, Claim 212, at 215:57–58 (emphasis added).
[18] '231 Patent, Claim 212, at 215:67.
[19] Defendants and TracBeam agree that geographical indications are not always available. *See* Indefiniteness Brief at 4 ("First geographical indication is not always available."); Indefiniteness Response at 6 ("The geographical indication may or may not be available.").

"Mp."[20] However, neither side asks the Court to correct the error. *See* Indefiniteness Response at 10 n.1 ("Plaintiff does not ask this Court to correct the error."). Instead, Defendants argue the Claim, as it is written, is insolubly ambiguous. Indefiniteness Brief at 5–7. TracBeam argues that despite the printing error, the Claim is not ambiguous. Indefiniteness Response at 10–12.

It is undisputed that Mn was a Patent Office printing error, and there appears to be no dispute that the claim would have been acceptable had the Patent Office not erred when printing the Patent.[21] At oral argument, the Court asked the parties if they believed it had the authority to correct the error, and both parties unequivocally responded, "No." Tr. *Markman* Hr'g 101, Nov. 8, 2012. This answer comes from the parties' belief that only the Patent Office, not this Court, may correct the error.

Both district courts and the Patent Office have the authority to correct errors in patents, but the authority of district courts is more limited. *Novo Industries, L.P. v. Micro Molds Corp.*, 350 F.3d 1348, 1356 (Fed. Cir. 2003). This is because a district court's correction applies retroactively in the action before it, while a Patent Office correction only applies prospectively. *Id.* at 1357. Thus, a district court's correction may be more beneficial to a litigant than a PTO correction. However, this power necessitates the need for careful scrutiny of the types of errors that can be corrected by district courts.

Defendants believe, and TracBeam does not object, that this correction falls outside the range of errors the Court may correct. Tr. *Markman* Hr'g 98, Nov. 8, 2012. In support, Defendants cited *Novo Industries*, which TracBeam agreed was controlling.[22] Tr. *Markman* Hr'g 97–98, Nov. 8, 2012. *Novo Industries* held that a "district court can correct only *Essex*-type

[20] TracBeam filed a Certificate of Correction with the Patent Office to correct the error. Indefiniteness Response at 10 n.1.
[21] Defendants' briefing did not address the ambiguity of the claims if the printing error was corrected.
[22] Defendants also cited *Novo Industries* in their briefing. *See* Indefiniteness Reply at 3 n.3.

errors" in patents.[23] *Id*. at 1357. *Essex*-type errors occur when: (1) the correction is not subject to reasonable debate based on consideration of the claim language; and (2) the prosecution history does not suggest a different interpretation of the claims.[24] *Id*. *Novo Industries* also gives guidance on what is not an *Essex*-type error. *Id*. For example, district courts can correct "obvious minor typographical and clerical errors in patents." *Id*. To illustrate a minor clerical error, *Novo Industries* noted that a court could add the word "toy" to a claim when "the deletion of 'toy' appear[ed] from the record of the proceeding before the PTO to have been an inadvertent error when the patent was printed." *Id*. (citing *Lemelson v. General Mills, Inc.*, 968 F.2d 1202, 1203 & n.3 (Fed. Cir. 1992)).

Neither party cited this example from *Novo Industries*, which is on all fours with the present case.[25] In *Novo Industries*, the word toy was inadvertently omitted from the issued patent. *Id*. Here, the word Mn was inadvertently replaced with the word Mp. Indefiniteness Response at 10 n.1. In *Novo Industries*, the court explicitly stated that a district court had the authority to add a word to correct a printing error. *Id*. Similarly, this Court has the authority to change a word to correct a printing error. *See Ultimax Cement Mfg. Corp. v. CTS Cement Mfg. Corp.*, 587 F.3d 1339, 1353 (Fed. Cir. 2009) (reversing a finding of indefiniteness because the district court failed to correct an obvious typographical error). A contrary result would be counterintuitive. It would be illogical to hold that a court could correct a printing error by adding a word, but it could not correct a printing error by replacing a word.[26] *See CBT Flint Partners, LLC v. Return Path, Inc.*, 654 F.3d 1353, 1358 (Fed. Cir. 2009) (citing *I.T.S. Rubber Co. v. Essex*

[23] *See I.T.S. Rubber Co. v. Essex Rubber Co.*, 272 U.S. 429 (1926).

[24] *Novo Industries* never explicitly states that a court *cannot* correct a patent whose error is clear from the prosecution history. *See Novo Industries*, 350 F.3d at 1356–57. It merely holds that a court can correct a patent when there is an error on the face of the patent. *Id*.

[25] The toy example comes from the very page of *Novo Industries* cited by Defendants at oral argument. Tr. *Markman* Hr'g 97–98, Nov. 8, 2012.

[26] This is further supported by *Novo Industries*, which notes that only the PTO, not a court, can correct "major errors." *Novo Industries*, 350 F.3d at 1357. Accidently printing Mn instead of Mp is not a "major error."

Rubber Co., 272 U.S. 429, 442 (1926)) ("It is well-settled law that, in a patent infringement suit, a district court may correct an obvious error in a patent claim."); *Ultimax Cement*, 587 F.3d at 1353; *Hoffer v. Microsoft Corp.*, 405 F.3d 1326, 1331 (Fed. Cir. 2005) ("A patent should not be invalidated based on an obvious administrative error….When a harmless error in a patent is not subject to reasonable debate, it can be corrected by the court.").

Accordingly, the Court corrects Claim 185 of the '231 Patent (211:21–23) to read, "The location indicative data for Mp is not obtained using geographic data indicative of a spatial range…" As amended, the Claim is not indefinite. Defendants' motion for summary judgment of indefiniteness regarding Claim 185 is **DENIED**.

"input requests" and "location requests"

Defendants argue Claim 10 of the '231 Patent and Claim 27 of the '484 Patent are indefinite because there is no way to distinguish between "input requests" and "location requests." Indefiniteness Brief at 7. The claims teach that both input requests and location requests can be received from "location requesting sources." '231 Patent, Claim 10, at 174:20–22, 60–61; '484 Patent, Claim 27, at 175:5–7, 12–13. Defendants argue that because both types of requests are received from location requesting sources, there is no way to determine whether a given request from a location requesting source is an input request or a location request. Indefiniteness Brief at 8. Alternatively, Defendants argue the word "requests" is unclear. *Id*. at 9. The Claims recite a "first request" and a "second request" without identifying whether this references input requests or location requests, which Defendants contend make the Claims ambiguous. *See* '231 Patent, Claim 10, at 175:2, 16; '484 Patent, Claim 27, at 175:21, 40.

Defendants' argument is based on their assumption that only one type of request can be received from the location requesting sources. However, the Claims plainly recite that both types

of requests can be received. *See* '231 Patent, Claim 10, at 174:20–22, 60–61; '484 Patent, Claim 27, at 175:5–7, 12–13. There is no ambiguity merely because the location requesting sources provide two different types of outputs. Nothing in the specification contradicts this interpretation—Defendants point to no language in the specification indicating that a location requesting source must provide only one type of request. *See* Indefiniteness Brief at 7–10.

Defendants' argument regarding first and second requests is also unpersuasive. Defendants argue the Claims are indefinite because there is no way to determine whether the "first request" and "second request" refer to input requests or location requests. *Id*. at 9. This argument is rebutted by the language of the Claims. Claim 27 recites "a first of the location requests," then recites "the first request" in the next paragraph. '484 Patent, Claim 27, at 175:13–24. Similarly, Claim 27 recites "a second of the location requests," then recites "the second request" in the next paragraph.[27] '484 Patent, Claim 27, at 175:25–42. There is no reference to any other request between the words "the first of the location requests" and the words "the first request," indicating "the first request" refers to "the first of the location requests." Thus, the Claims are not insolubly ambiguous.

Defendants' motion for summary judgment of indefiniteness based on "location requests" and "input requests" is **DENIED**.

"different"

Lastly, Defendants argue Claims 10 and 27 are indefinite based on the following passage:

> Wherein for at least one of said first and second output criteria there is an output criteria for another of the location requests that is *different* from said at least one output criteria;

'231 Patent, Claim 10, at 175:20–23; '484 Patent, Claim 27, at 175:44–47. Defendants present four arguments that the word "different" makes this clause insolubly ambiguous. Indefiniteness

[27] Claim 10 contains similar language. *See* '231 Patent, Claim 10, at 174:60–61, 175:2, 6–8, 16.

Brief at 10. First, Defendants argue different could mean either different types or different values. *See id*. at 11 ("It is unclear whether the 'different' output criteria must be a different *type* of criteria (e.g., accuracy criteria vs. granularity criteria), or whether it could be the same type of criteria but with a different *value* (e.g., accuracy criteria of within 30 meters vs. accuracy criteria of within 100 meters).") (emphasis in original). Second, Defendants argue it is unclear whether "different" is associated with the first or the second output criteria. *Id*. Third, Defendants contend that when there is a different criteria for both the first and second output criteria, it is unclear whether there is only one "different" criteria for both the first and second output criteria, or whether there are separate different criteria for each of the first and second criteria. *Id*. Lastly, Defendants contend the Claims are indefinite because there are no indications where the output criteria "resides, is accessed, or received." *Id*. TracBeam counters that Defendants failed to present any evidence that one of ordinary skill in the art would find the Claims insolubly ambiguous. Docket No. 344 at 3. TracBeam argues that what Defendants refer to as ambiguities are instead "the absence of a limitation in the claim." *Id*. at 1.

None of Defendants' arguments are persuasive. First, Defendants argue the Claims are indefinite because there is no way to determine whether different refers to a different type of criteria or a different value of the same criteria. Indefiniteness Brief at 10–11. However, the Claims unambiguously cover both scenarios. *Cf.* AMERICAN HERITAGE COLLEGE DICTIONARY 387 (3d ed. 1997) (defining different as "unlike in form, quality, amount, or nature; dissimilar"). There is no language in the Claims requiring a specific type of different—the Claims merely recite "different." *See* '231 Patent, Claim 10, at 175:20–23; '484 Patent, Claim 27, at 175:44–47. Second, Defendants argue there is no way to determine whether "different" is associated with the first or second output criteria. Indefiniteness Brief at 11. However, the Claims do not require

different to be associated with either the first or second output criteria. The Claims only require "at least one" be different. *See* '231 Patent, Claim 10, at 175:20–23; '484 Patent, Claim 27, at 175:44–47. There is no requirement that "different" be associated with a particular output criteria.

Third, Defendants argue the Claims are ambiguous when both the first and second output criteria are "different." Indefiniteness Brief at 11. Defendants argue that when both criteria are different, it is unclear whether the two criteria must have the same "different" or each be separately different. *Id*. The Claims unambiguously cover both scenarios. The Claims merely say "different," not "both different" or "exactly one different." *See* '231 Patent, Claim 10, at 175:20–23; '484 Patent, Claim 27, at 175:44–47. Lastly, Defendants contend the Claims are indefinite because it is unclear where the output criteria "resides, is accessed, or received." Indefiniteness Brief at 11. Defendants essentially ask the Court to find the Claims indefinite because the patentee could have included a further limitation regarding the output criteria. However, the fact that the patentee could have included an additional limitation does not mean the asserted claims are ambiguous without that limitation. *See Exxon Research & Eng'g Co. v. United States*, 265 F.3d 1371, 1382 (Fed. Cir. 2001) (reversing a finding of indefiniteness when a trial court found a claim indefinite because the claim failed to recite an additional limitation).

For these reasons, Defendants' motion for summary judgment of indefiniteness regarding the word "different" is **DENIED**.

CONCLUSION

For the foregoing reasons, the Court interprets the claim language in this case in the manner set forth above. For ease of reference, the Court's claim interpretations are set forth in a table in Appendix A. Defendants' Motion for Summary Judgment of Indefiniteness (Docket No. 316) is **DENIED**.

Appendix A

Claim Term	Court's Construction
Mobile station	A mobile wireless device that is at least a transmitting device and may include a receiving device
Communication station	No construction necessary
Communication stations at terrestrial locations	No construction necessary
Terrestrial communication stations	No construction necessary
Terrestrial stations	No construction necessary
Computational machinery	One or more machines (such as a computer or hardware device) that performs computations
Computational machinery performing first and second mobile station location estimation determiners	No construction necessary
Computational machine location providing sources	Computational machinery for providing location information
Mobile station location estimation determiners	Machine executed process for providing mobile station location estimates
Mobile station location determining sources	Source (such as a computer system, device, or component) for determining mobile station locations
Mobile station location estimating sources	Source (such as a computer system, device, or component) for estimating mobile station locations
Location information	No construction necessary
Location related information	No construction necessary
Location related response information	No construction necessary
An unknown location of said mobile station M	A location of the mobile station for which a resulting location estimate is to be determined
Mobile station location techniques	Technique for determining mobile station locations
Wireless signal	No construction necessary
Wirelessly	No construction necessary
Output criteria	Data specifying one or more required attributes of the output location data
A corresponding destination for a responsive output	No construction necessary
A determination of said resulting location estimate is dependent upon at least one of (a) and (b) following: (a) a first value obtained from said first location related information, and (b) a second value obtained from said second location related information	No construction necessary

Claim Term	Court's Construction
Determining resulting location information for each of the first and second mobile stations using at least one of: (c1) a first value obtained from said first location related information, and (c2) a second value obtained from said second location related information	No construction necessary
Determining resulting location information of the mobile station using at least one of: a first value obtained from said first location related response information, and a second value obtained from said second location related response information	No construction necessary
Determining resulting location information, for each of one or more locations of said mobile station, using at least one of: a first value obtained from the first instance, and a second value obtained from the second instance	No construction necessary
Outputting, to a source for accessing location data for said mobile station, resulting location information that is dependent upon: at least one of said first and second location information	No construction necessary
Wherein said one or more location determining sources perform the following techniques (i), and (ii):	Wherein each of the location determining sources performs one or both of the following techniques (i) and (ii), and there is at least one location determining source or combination of such sources that collectively perform both techniques
Corresponding input data obtained using wireless signal measurements obtained by transmission between said mobile station M and the communication stations	No construction necessary
Geographical extent	Geographical area or range

So ORDERED and SIGNED this 23rd day of January, 2013.

LEONARD DAVIS
UNITED STATES DISTRICT JUDGE